supplying an oscillating air pressure component to the mouth of the patient in a synchronized relationship with the oscillating force component.

REMARKS

This Amendment is in response to the Office Action of October 3, 2001, in which claims 1-8 and 11-15 were rejected, and claims 9 and 10 were withdrawn as directed to a non-elected group due to the restriction requirement dated August 17, 2001. New claims 16-57 have been added. Reconsideration and allowance of claims 1-8 and 11-57 are requested.

Claims 4 and 8 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. The Office Action states "It is unclear how net air flow is maintained to both the air supply port and the outlet port." Both claims 4 and 8 have been amended to read "the supplying air pressure maintains a flow of air through the air supply port and out of the outlet port." Claims 4 and 8 are believed to be in condition for allowance.

In addition, Claims 1-8, 11-12, and 14-15 have been amended to improve grammar and readability of those claims. Claims 1-8, 11-12, and 14-15 are believed to be in a condition for allowance. Reconsideration and allowance is respectfully requested.

Claims 1, 3-5, 7-8, and 11-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Alferness (US Patent 4,349,015).

Claims 1, 3-4, and 14

With regard to claims 1 and 14, not all elements are disclosed in Alferness. An "air pressure having an oscillating air pressure component and a steady state air pressure component," for example, is not found in Alferness.

The Office Action cites column 4, lines 34-42 for the oscillating air pressure component and column 4, lines 63-67 for the steady state air pressure component. Applicant cannot find both an oscillating air pressure component and a steady state air pressure component in the cited reference as described in claims 1 and 14.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claim and must be arranged as required by the claim. MPEP 2131. The rejection of claims 1 and 14, in view of Alferness, should be withdrawn.

Claims 3 and 4 are dependent upon claim 1. Since applicant believes claim 1 is not anticipated by Alferness, then claims 3 and 4 are also not anticipated. In addition, claims 3 and 4 provide additional patentable features not taught in the art.

The rejection of claims 1, 3-4, and 14, in view of Alferness, should be withdrawn. Reconsideration and allowance is respectfully requested.

Claims 5, 7-8

With regard to claim 5, not all elements are disclosed in Alferness. An "air pressure . . . to at least partially cancel the steady state force component," for example, is not found in Alferness.

The Office Action does not specifically cite to an element in Alferness showing an "air pressure . . . to at least partially cancel the steady state force component," The closest statement relating to this element is the statement "the pressures [are] inherently counteracting since they originate from the same source, both pressures being 'effective.'" First, applicant traverses the statement that the pressures of Alferness are inherently counteracting since they originate from the same source. Air pressures inside a closed container may inherently counteract the air pressures inside the same vessel, but that does not mean that the pressures outside the container must inherently counteract each other. Second, Alferness does not disclose an air pressure that at least partially cancels the steady state force component, as recited in claim 5.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claim and must be arranged as required by the claim. MPEP 2131. The rejection of claims 5, in view of Alferness, should be withdrawn.

Since claims 7 and 8 are dependent upon claim 5, they are also not anticipated by the cited reference. In addition, claims 7 and 8 provide additional patentable features.

The rejection of claims 5 and 7-8, in view of Alferness, should be withdrawn. Reconsideration and allowance is respectfully requested.

Claims 11-13

With regard to claim 11, not all elements are disclosed in Alferness. "[A]pplying an oscillating compressive force to a chest of a patient" and "supplying air pressure in a direction and magnitude which tends to counteract a steady state force component of the oscillating compressive force," for example, are not found in Alferness.

First, the Office Action states "Alferness shows a method comprising: applying an oscillating compressive force which includes a steady state component (30, column 4, lines 55-57)." However, inflatable bladder 30 of Alferness is applied to the abdomen, not the chest, as recited in claim 11.

Second, the Office Action states "the pressures [are] inherently counteracting since they originate from the same source, both pressures being 'effective.'" First, applicant traverses the statement that the pressures of Alferness are inherently counteracting since they originate from the same source. Air pressures inside a closed container may inherently counteract the air pressures inside the same vessel, but that does not mean that the pressures outside the container must inherently counteract each other. Therefore, Alferness does not disclose "supplying air pressure in a direction and magnitude which tends to counteract a steady state force component of the oscillating compressive force," as recited in claim 11.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claim and must be arranged as required by the claim. MPEP 2131. Applicant respectfully requests that the rejection of claim 11, in view of Alferness, be withdrawn.

Since claims 12 and 13 are dependent upon claim 1, they are also not anticipated by Alferness. In addition, claims 12 and 13 provide additional patentable features.

Applicant respectfully requests that the rejection of claims 11 and 12-13, in view of Alferness, be withdrawn. Reconsideration and allowance is respectfully requested.

Claim 15

With regard to claim 15, not all elements are disclosed in Alferness. "[C]oordinating the applying the oscillating compressive force and the supplying air pressure to the mouthpiece to make the oscillating compressive force effective throughout each entire cycle to induce mucus movement," for example, is not found in Alferness.

First, the Office Action does not cite and Alferness does not disclose "coordinating the applying the oscillating compressive force and the supplying air pressure," as recited in claim 15.

Second, the Office Action does not cite and Alferness does not disclose how "to make the oscillating compressive force effective throughout each entire cycle to induce mucus movement," as recited in claim 15.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claim and must be arranged as required by the claim. MPEP 2131. Applicant respectfully requests that the rejection of claim 15, in view of Alferness, be withdrawn. Reconsideration and allowance is respectfully requested.

REJECTIONS UNDER 103

Claims 2 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Alferness alone. Applicant believes that Alferness as cited in the outstanding Office Action fails to establish a *prima facie* case of obviousness.

Since claims 2 and 6 are dependent upon claims 1 and 5, and claims 1 and 5 are believed to be allowable, (as described above) then claims 2 and 6 are allowable. Applicant respectfully requests that rejection of claims 2 and 6 be withdrawn.

In addition, claims 2 and 6 provide additional patentable features, taken as a whole, over the cited art. The examiner admits in the Office Action that Alferness fails to disclose all of the

limitations of claims 2 and 6. The Office Action states that the reference "does not disclose values of relative pressure." The Office Action concludes "such limitations are considered obvious design choices."

However, a particular parameter must first be recognized as a result-effective variable, i.e. a variable that achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be considered routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). MPEP 2144.05.

Alferness fails to show that relating the values of the steady state air pressure component and the oscillating compressive force achieves a recognized result. Therefore, Alferness alone fails to establish a *prima facie* case of obviousness. Applicant respectfully requests that rejection of claims 2 and 6 be withdrawn. Reconsideration and allowance is respectfully requested.

CONCLUSION

Claims 16-56 have been added. Claims 16-56 are believed to be in a condition for allowance. Consideration and allowance is respectfully requested.

In conclusion, Applicant believes this Amendment has placed the application in condition for allowance. Notice to that effect is respectfully requested. The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 11-0982. A duplicate copy of this communication is enclosed.

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: 12/7/01

By _____
David R. Fairbairn, Reg. No. 26,04
THE KINNEY & LANGE BUILDING
312 South Third Street
Minneapolis, MN 55415-1002
Telephone: (612) 339-1863
Fax: (612) 339-6580

DRF:CJB:kmm

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

1.(Twice amended) A chest wall oscillation method, comprising:

applying an oscillating compressive force to a chest of a patient [which] , the oscillating compressive force having [includes] a steady state force component and an oscillating force component; and

supplying air pressure to a mouthpiece in communication with a mouth of a patient, the air pressure having [with] an oscillating air pressure component and [with] a steady state air pressure component, the steady state air pressure component having [which is in] a direction and [which has] a magnitude [which tends] tending to counteract the steady state force component of the oscillating compressive force.

2.(Amended) The method of claim 1 wherein the steady state air pressure component at least approximately equals a mean pressure exerted on the [patient's] chest of the patient by the oscillating compressive force.

3.(Amended) The method of claim 1 wherein the mouthpiece includes a mouthpiece chamber having a mouth port for communication with the patient's mouth, an outlet port, and an air supply port, [through which] wherein the supplying air pressure [is supplied] to the mouthpiece is through the air supply port.

4.(Twice Amended) The method of claim 3 wherein the supplying air pressure [is supplied to the air supply port of the mouthpiece to maintain] maintains a [net] flow of air [to] through the air supply port and out of the outlet port.

5.(Twice amended) A chest wall oscillation method, comprising:

applying an oscillating compressive force to a chest of a patient [which] , the oscillating compressive force having [includes] a steady state force component and an oscillating force component; and

supplying air pressure to a mouthpiece in communication with a mouth of [a] the patient to at least partially cancel the steady state force component and provide an oscillating air pressure component.

6.(Amended) The method of claim 5 wherein the steady state air pressure component at least approximately equals a mean pressure exerted on the [patient's] chest of the patient by the oscillating compressive force.

7.(Amended) The method of claim 5 wherein the mouthpiece includes a mouthpiece chamber having a mouth port, an outlet port, and an air supply port, and the supplying air pressure [port through which the air pressure is supplied] to the mouthpiece is through the air supply port.

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

8.(Twice Amended) The method of claim 5 wherein the supplying air pressure [is supplied to the air supply port of the mouth piece to maintain] maintains a [net] flow of air [to] through the air supply port and out of the outlet port.

[9.(Withdrawn)]

[10.(Withdrawn)]

11.(Amended) A chest wall oscillation method for removal of mucus from a lung of a patient, the method comprising:

applying an oscillating compressive force to a chest of a patient; and

supplying air pressure to a mouthpiece in a direction and a magnitude which tends to counteract a steady state force component of the oscillating compressive force.

12.(Amended) The method of claim 11 wherein the oscillating compressive force includes [a] the steady state force component and an oscillating force component.

14.(Amended) A chest wall oscillation method for removal of mucus from a lung of a patient, the method comprising:

applying an oscillating compressive force to a chest of [the] a patient to cause displacement of [the] a chest cavity volume, the oscillating compressive force including a steady state force component and an oscillating force component; and

supplying air pressure to a mouth of [a] the patient, the air pressure having [with] an oscillating air pressure component and [with] a steady state air pressure component, the steady state air pressure component having [which is in] a direction and [which has] a magnitude [which tends] tending to make the oscillating compressive force effective throughout each entire cycle.

15.(Amended) A method for removal of mucus from a lung of a patient, the method comprising:

applying an oscillating compressive force to a chest of [the] a patient;

supplying air pressure to a mouthpiece positioned in a mouth of the patient; and

coordinating the applying the oscillating compressive force and the supplying air pressure [supplied] to the mouthpiece to make the oscillating compressive force effective throughout each entire cycle to induce mucus movement.

16.(New) A chest wall oscillation method, comprising:

applying an oscillating compressive force to a chest of a patient, the oscillating compressive force having a steady state force component and an oscillating force component; and

supplying an air pressure to a mouth of the patient, the air pressure having a steady state air pressure component and an oscillating air pressure component, the steady state air pressure component opposing the steady state force component applied to the chest.

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

17.(New) The method of claim 16 wherein the steady state air pressure component is substantially equal to the steady state force component.

18.(New) The method of claim 16 wherein the supplying the air pressure causes no perceived pressure from the steady state force component of the applying the oscillating compressive force.

19.(New) The method of claim 16 wherein the applying an oscillating compressive force causes a pressure on the chest and the supplying air pressure to the mouth reduces the pressure on the chest.

20.(New) The method of claim 16 wherein the supplying the air pressure reduces effort needed for the patient to breathe against the oscillating compressive force.

21.(New) The method of claim 16 wherein the steady state air pressure component is greater than the steady state force component.

22.(New) The method of claim 16 wherein the supplying the air pressure to the mouth causes an increase in volume of lungs of the patient.

23.(New) The method of claim 16 wherein the steady state air pressure component is greater than the steady state force component to cause an increase in volume of lungs of the patient.

24.(New) The method of claim 16 wherein the steady state air pressure component is less than the steady state force component.

25.(New) The method of claim 16 wherein the supplying the air pressure to the mouth causes a decrease in volume of lungs of the patient.

26.(New) The method of claim 16 wherein the steady state air pressure component is less than the steady state force component to cause a decrease in volume of lungs of the patient.

27.(New) The method of claim 16 wherein supplying the air pressure changes an effective atmospheric pressure.

28.(New) The method of claim 16 wherein the oscillating air pressure component is supplied in a synchronized relationship with the oscillating force component.

29.(New) The method of claim 28 wherein the supplying the air pressure enhances oscillations caused by the applying the oscillating compressive force.

30.(New) The method of claim 28 wherein the supplying the air pressure reduces force oscillations caused by the applying the oscillating compressive force.

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

31.(New) The method of claim 28 wherein the supplying the air pressure substantially cancels force oscillations caused by the oscillating compressive force.

32.(New) The method of claim 28 wherein the oscillating air pressure component exhibits a non-sinusoidal waveform is produced.

33.(New) The method of claim 28 wherein the oscillating air pressure component produces a simulated cough is produced.

34.(New) The method of claim 28 wherein the oscillating air pressure component causes an airflow out of the mouth to be substantially zero while simultaneously building up an airway pressure in the chest, followed by the airflow rapidly increasing out of the mouth.

35.(New) The method of claim 28 wherein the oscillating air pressure component causes a first flow airway rate while the patient is inspiring to be lower than a second airway flow rate while the patient is expiring, with the first flow rate and the second flow rate using equal volumes of air.

36.(New) The method of claim 16 wherein the supplying air pressure enhances the effectiveness of the applying the oscillating compressive force.

37.(New) The method of claim 16 wherein the supplying air pressure enhances the function of the applying oscillating compressive force.

38.(New) The method of claim 16 wherein the supplying air pressure causes an airflow in the chest is to be enhanced.

39.(New) The method of claim 16 wherein the supplying air pressure enhances effectiveness of the oscillating force component without increasing the oscillating compressive force.

40.(New) The method of claim 16 wherein the supplying the air pressure further comprises supplying the air pressure through a mouthpiece in communication with the mouth of the patient.

41.(New) The method of claim 40 wherein the mouthpiece includes a mouth port, an outlet port, and an air supply port.

42.(New) The method of claim 41 wherein the supplying the air pressure is through the air supply port to the outlet port and the mouth port.

43.(New) The method of claim 42 wherein a flow of air is maintained through the supply port.

44.(New) The method of claim 43 wherein the flow of air provides a continuous supply of fresh air for normal respiration.

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

45.(New) The method of claim 42 wherein tidal breathing of the patient moves air through the outlet port into lungs of the patient.

46.(New) The method of claim 41 wherein the outlet port is positioned in relation to humidified air travel from the mouth port in a cycle.

47.(New) The method of claim 41 wherein the outlet port is about a distance from the mouth port that humidified air travels in a cycle of the oscillating air pressure component.

48.(New) The method of claim 41 wherein the mouthpiece is configured so that air from an outflow half cycle is returned to the patient during an inflow half cycle.

49.(New) The method of claim 41 wherein the outlet port is located at a distance from the mouth port that reduces drying out of airways of the patient.

50.(New) The method of claim 41 wherein the outlet port provides a drain for fluids.

51.(New) The method of claim 40 wherein the mouthpiece includes a mouthpiece chamber.

52.(New) The method of claim 51 wherein the mouthpiece chamber has a configuration which causes humidified air travel from the mouth port in a cycle of the oscillating air pressure component to be contained substantially within the chamber.

53.(New) The method of claim 51 wherein the mouthpiece chamber is configured to contain a volume of air of a cycle.

54.(New) The method of claim 51 wherein the mouthpiece chamber is configured so that air from an outflow half cycle is returned to the patient during an inflow half cycle.

55.(New) The method of claim 51 wherein the mouthpiece chamber reduces drying out of airways of the patient.

56.(New) A chest wall oscillation method, comprising:

applying an oscillating compressive force to a chest of a patient, the oscillating compressive force having a steady state force component and an oscillating force component;

supplying an air pressure to a mouth of the patient, the air pressure having a steady state air pressure component and an oscillating air pressure component,

supplying the steady state air pressure component in relation to the steady state force component applied to the chest; and

supplying the oscillating air pressure component in a synchronized relationship with the oscillating force component.

APPENDIX:
MARKED UP VERSION OF SPECIFICATION AND CLAIM AMENDMENTS

57.(New) A chest wall oscillation method, comprising:

applying an oscillating compressive force to a chest of a patient, the oscillating compressive force having a steady state force component and an oscillating force component;

supplying a steady state air pressure component to a mouth of the patient in relation to the steady state force component applied to the chest; and

supplying an oscillating air pressure component to the mouth of the patient in a synchronized relationship with the oscillating force component.